lowering the detection limit of the biosensor; the proposed biosensor could successfully detect the detection limit from 10^{-9} M.

Key words: Acetylcholinesterase, Immobilization, Paraoxon, Fiber-optic, Detection limit.

Abstract No.49

A novel approach of interaction between human serum albumin and an anti-breast cancer drug by MCR-ALS method

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The interaction of Human serum albumin (HSA) with Tamoxifen (TMX) was investigated by chemometrics techniques. One of the important aspects of this study is the introduction of MCR-ALS method as a helpful implement to quantification and qualification the intermediates which contribute in protein aggregation process. Basic hypothesis related with protein aggregation mechanism, is the presence of intermediates which can be populated by the wide variety of conditions. In experimental conditions due to the partially denaturing condition, determination and characterization of the associated intermediates are not possible. Multivariate curve resolution already has been shown as a powerful tool to determine the characterization and identification of all contributions involving in protein folding / unfolding process. MCR methods have been extended to resolve the problems related with mixtures in analytical chemistry. The most important feature of MCR methods is that no previous information about the characterization and nature of the system under study is necessary. MCR methods focused on recovery quantitative information i.e. the MCR main aim is determination the response profiles of the components associated with significant variation sources in the system. On the other hand, one can obtain the pure concentration and spectra profiles correspond to contributions which present in mixture simultaneously. Our results showed that in HSA-tamoxifen complex solution, there are three components with different behavior that are in all tamoxifen binding to HSA processes. On the other hand, HSA has been partially unfolded in the presence of tamoxifen in binary system.

Key words: MCR-ALS, Curve resolution, Chemometrics, HSA, Protein aggregation.

Abstract No.50

Iranian plasma thermogram differs from others

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Early detection of Diseases, especially in cancer, is an interesting subject by physicians. Early diagnosis makes the treatments so effective that reduces the costs. Yet, there are no reliable early-stage screening tests for some cancers. In spite of current progress in proteomics in discovery of disease biomarkers, this technique has some limits e.g. it is unsuitable for routine tests. Differential scaning calorimetry (DSC) has opened new insights into this area. Thermogram of plasma from healthy Iranians were obtained and averaged to yield a normal plasma thermogram of Iranian population. The results showed some differences among Iranian thermogram from ones reported previously in terms of peaks, the first moment and etc. The possible cause of different pattern may arise from variation in plasma protein concentration in Iranian and other races. It seems that it would be necessary to define a standard thermogram of any population for early detection of diseases using DSC.

Key words: Differential Scaning Calorimetry, Early Detection, Cancer, Plasma Thermogram.
